DOCUMENT RESUME

ED 107 113 FL 006 385

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TITLE Some Notes on Lee and Canter's "Developmental Sentence Scoring: A Clinical Procedure for Estimating Syntactic Development in Children's Spontaneous Speech." Papers and Reports on Child Language Development, No. 4.
INSTITUTION Stanford Univ., Calif. Committee on Linguistics.
PUB DATE Jun 72
NOTE 7p.

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS Aphasia; *Child Language; Language Ability; *Language Development; Language Research; Linguistic Competence; Measurement Techniques; *Psycholinguistics; Retarded Speech Development; Sentence Structure; *Speech Evaluation; Speech Tests; *Syntax; Verbal Development; Vocabulary Development

ABSTRACT

This paper discusses Lee and Canter's procedure for assessing child language development as an example of how psycholinguistics is beginning to enter the language clinic. The procedure includes recording and transcribing examples of children's sentences, then scoring them to yield a Developmental Sentence Score (DDS). This procedure was compared to two other measures of child language development, a word-morpheme count and an inflection acquisition measure. Lee and Canter's procedure is considered especially significant in that it is based on the actual production of a child, but a main objection is that their approach is not linguistically oriented enough, so that their definition of what constitutes a sentence overlooks valuable information. (AM)

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SOME NOTES ON LEE AND CANTER'S "DEVELOPMENTAL SENTENCE SCORING: A CLINICAL PROCEDURE FOR ESTIMATING SYNTACTIC DEVELOPMENT IN CHILDREN'S SPONTANEOUS SPEECH"

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Diagnostic assessment of the linguistic functioning of individual children poses many questions to the language clinician. How can one characterize a child's language performance and state whether that performance is deviant, and if so, whether serious enough to warrant some kind of intervention? Should one compare his language with children of the same chronological age? To what extent do psychometric or linguistic test scores accurately reflect the syntactic structures which a child produces? To answer some of these questions, language clinicians are looking increasingly at the work conducted recently in the field of psycholinguistics.

Laura Lee and Susan Canter's "Developmental sentence scoring: a clinical procedure for estimating syntactic development in children's spontaneous speech" represents an example of the ways in which psycholinguistic research is beginning to find its way into language clinics. Lee and Canter suggest that a developmental scale of language acquisition might provide clinicians with a measure to which one might compare an individual child's language, thereby seeing whether a child is developing normally, as well as locating specific areas of deficit. Lee and Canter recommend recording and transcribing examples of children's sentences. They have developed a scoring system which assigns points for eight features, each of the eight divided into categories given progressively weighted scores along a developmental progression. Scores for each of the features range from 1 to 8, depending on the degree of difficulty of the particular category. In addition, if a sentence is 'correct' by adult standards, another point is given. The eight features, with some examples of each, are as follows:

1. Indefinite pronouns or noun modifiers
   Points range from 1 for it, this, or that to 6 for both, second.
2. Personal pronouns
   Points range from 1 for 1st and 2nd person to 7 for own, oneself.
3. Main verbs
   Ranging from 1 point for uninflected verbs to 8 for modal auxilliary + be + verb + ing.
4. Secondary verbs
   Points range from 1 for early infinitival constructions (e.g., wanna see) to 6 for gerunds.
5. Negatives
   Points range from 1 to 5.
6. Conjunctions
   Points range from 1 for and to 7 for therefore.
7. Interrogative reversal
   Points range from 1 for copula (is) reversal to 5 for reversal with 3 auxiliaries.
8. Wh questions
   Points range from 1 for who or what to 7 for whose or which.

Fifty 'complete, different, consecutive, intelligible, non-echolalic' sentences from a child are each scored by the scoring procedure described above. The total number of points divided by the total number of sentences yields a Developmental Sentence Score (DSS)

The DSS was used at the Northwestern Speech Clinic as a clinical measure of children's progress in language acquisition. It also was administered to 160 normal children ranging in age from 3 to 7, in order to establish some preliminary norms for use as a diagnostic tool.

Many aspects of Lee and Canter's procedure are significant and valuable. Particularly important is the basis on actual language performance. Many assessment procedures for linguistic functioning have not looked specifically at the sentences which a child comprehends and produces. The DSS is based on the actual production of a child. Moreover, Lee and Canter's observations on systematic ways to collect children's sentences are carefully stated, as well as their descriptions of pitfalls which may occur in transcription and interpretation. An important addition is their use of contextual information in analyzing sentences, which, as Lois Bloom notes (1967), had been absent from Lee's previous analysis of children's first sentences (1966).

Lee and Canter's Developmental Sentence Scoring shows that recent theoretical research in linguistics and psycholinguistics can be translated into practice in valuable ways for the speech pathologist and classroom teacher. There is a clear description, for example, of the English verb system, as formulated by Chomsky, with examples of children's acquisition of the verb system.

My major criticism of this important piece of work is that although it looks to linguistics for descriptions of children's language, it does not go quite far enough. The analysis suffers from a failure to translate into practice transformational grammarians' concern with the sentence as a basic unit. The DSS focuses on isolated words and morphological forms and a child's use of sentences is inferred from the isolated words and forms.

To be included in the DSS scoring, a sentence must be 'complete', that is, must have a noun and a verb in a 'subject-predicate relationship' (except for imperatives, which do not have to have a surface subject). By this standard the boy ate a cookie is a sentence, whereas the boy riding a bike my brother is not (although it contains a relative, and is a more complex structure than the first sentence). Similarly, in Lee and Canter's examples, they include an 'independent clause' but not a dependent clause which is a 'grammatical fragment'. Thus in the sentence over there but it's too far away, only it's too far away is included in the scoring. The place where you look out would not be included (although it contains a relative and thus is an important example of sentence-embedding in this child's language). A more linquistically oriented definition of what constitutes a sentence would keep valuable information about child's production as well as being able to

bring to bear on the analysis all the rich data on early stages of language acquisition (Brown, in press; Bloom, 1970). The relationship between sentence length and sentence complexity is still undetermined, but it appears very relevant in the earliest stages of language acquisition (Ingram and Eisenson, 1972; Sharf, 1972).

In assigning categories to features, decisions were made which make assigning appropriate scores for particular words very difficult to find on the scoring charts. The demonstratives this and that, for example, receive 1 point under category 1 (indefinite pronouns or noun modifiers). The plurals of these same demonstratives, these and those, receive 4 points under category 2 (personal pronouns). In another instance, words introducing relatives who, which, that, what receive 6 points under category 2 (personal pronouns), whereas the word where introducing a relative receives 6 points under category 8 (conjunctions). The total score remains the same regardless of the category. Finding the proper category or feature in order to score a word may become confusing at times.

Judgments with regard to developmental sequence within each feature have three bases: recent psycholinguistic research, clinical observation, and armchair presumption. The authors are careful to note that they have made presumptions. Within each feature, however, it is not always easy to find the rationale for the ordering of the categories. The use of pronouns, for example, is rated higher than nouns (nouns receive no score at all). And yet the use of pronouns may not necessarily reflect more advanced linguistic development than the use of nouns. It is my own clinical observation that children with word-finding problems use pronouns or general nouns like 'thing' or 'stuff' perhaps to relieve the necessity of learning or remembering a variety of nouns. These children often do not observe the complicated rules which govern pronoun usage.

In the ordering of Wh questions, to give another example, Who and What questions are ranked as simplest, with When and How appearing 'lower' than Why. The results in Ingram (1972) contradict this. Also, some preliminary analysis of a question comprehension study we are conducting shows that Why is comprehended earlier than How or When, and that the distinction between Who and What is difficult even for 5-year-olds. Ongoing research may clarify many questions such as this, which will set such orderings on the basis of empirical evidence, rather than assumptions about relative complexity.

To compare various measures of children's language, I took language samples from three children who had come to the Institute for Childhood Aphasia for diagnostic assessment. Child A was a 9-1/2-year-old boy referred for language and reading difficulties; child B was an 8-year-old hard-of-hearing girl who had difficulty with language more than her hearing loss could account for; child C was a 5-1/2-year-old boy with fluent but bizarre language, who was subsequently referred elsewhere for a behavior disturbance. All 3 samples were scored by 3 measures: DSS;

a word-morpheme count (the average of the mean number of words per sentence and the mean number of morphemes per sentence) and the acquisition of 6 inflections, as described by Cazden,(1972). The latter calculated the percentage of times an inflection was supplied in contexts where it was required by adult standards. The following table compares the 3 measures:

Table 1. Scores on three different measures by three linguistically deviant children.

Child	DSS	Word-Morpheme	6 Inflections (total)
A	2.9	5.59	56%
B	5.7	3.9	66%
C	5.72	5.59	77%

By all measures, child C's language is the most highly developed, which fits clinical impressions during assessment. Child A's DSS score was skewed by the fact that he omitted is from many of his sentences, which limited the variety and number of sentences which could be included for scoring. The rank ordering of Children A and B differs by what measure you choose. The measure of the 6 inflections seems most directly related to actual language performance, as shown by the following table, the percentages being the number of times a rule was applied:

Table 2. Percentages of occurrence in obligatory contexts of six grammatical morphemes for three linguistically deviant children.

Child	-ing	Plural	Past	Possessive	Pres.Ind.	Aux.
A	56%	85%	75%	0	56%	13%
B	56%	73%	83%	No instances	67%	22%
C	80%	100%	33%	No instances	100%	33%

All of us who are using the findings of psycholinguistic research obviously have many unresolved questions ahead of us. This article highlights one of the foremost: what is the relationship between psychological and linguistic complexity? Although Laura Lee and Susan Canter have shown us some practical and useful approaches, the search continues for better ways to assess children's linguistic abilities.

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